

**EMERGENCY RESPONSE  
QUALITY ASSURANCE SAMPLING PLAN**

**FOR**

**INTERCONTINENTAL TERMINALS COMPANY  
1943 INDEPENDENCE PARKWAY  
LAPORTE, HARRIS COUNTY, TEXAS**

Prepared for

**U.S. Environmental Protection Agency Region 6**  
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## 1 INTRODUCTION

Weston Solutions, Inc., the Superfund Technical Assessment and Response Team (START) contractor, has been tasked by the U.S. Environmental Protection Agency (EPA)-Emergency Management Branch (EMB) Region 6 under Region 6 Contract No. EP-S5-17-02, Technical Direction Document (TDD) No. 0001/19-XXX (Appendix C) to provide Emergency Response (ER) technical support for the at the Intercontinental Terminals Company (ITC) facility located at 1943 Independence Parkway in LaPorte, Harris County, Texas.

START was mobilized on 17 March 2019 to respond to an incident involving an uncontrolled fire which affected a series of above ground storage tanks containing various gasoline constituents including naphtha, xylene, and toluene.

A Site Location Map is provided as Figure 1-1. All figures are provided as separate portable document format (PDF) files. The site coordinates are Latitude 29.729425° North and Longitude 95.090321° West. Site coordinates were collected from the facility entrance. START has prepared this Quality Assurance Sampling Plan (QASP) to describe the technical scope of work and activities to be completed as part of the TDD.

### 1.1 PROJECT OBJECTIVE

START is providing technical assistance to EPA Region 6 for performing ER data collection necessary to support a determination by EPA that the site presents a threat to public health or welfare of the United States or the environment in accordance with *40 Code of Federal Regulations (CFR) 300.415*.

The primary objective of this ER sampling is to collect data that most accurately determines the potential threat to the surface water pathway posed by the incident. Samples will be collected from areas that may be affected by ITC product runoff and/or fire suppression water. To achieve this objective, surface water samples will be collected from locations to be determined in the field, and the analytical results will be evaluated and compared to background concentrations and regulatory action levels. Sample locations will be approved/determined by EPA prior to sample collection.

## **1.2 PROJECT TEAM**

The Project Team consists of David Crow, the EPA Team Deputy Program Manager; Daniel Tighe, the EPA Team Project Team Leader (PTL)/Field Safety Officer (FSO); and additional EPA Team field team members, as necessary, who will assist with sampling activities. The P T L will be responsible for the technical quality of work performed in the field and will serve as the EPA Team liaison to EPA Region 6 in the field during the site activities. The PTL, with the concurrence of EPA, will determine the precise location for sample collection in the field, collect samples as necessary, log the activities at each sample location in the field logbook, and verify the sample documentation. The PTL will oversee the packaging and shipping of samples to the EPA-approved laboratory. The EPA Team PTL will also be responsible for providing overall site health and safety support for START personnel.

## **1.3 QASP FORMAT**

This QASP has been organized in a format that is intended to facilitate and effectively meet the objective of the sampling action. The QASP is organized as follows:

- Section 1 – Introduction
- Section 2 – Site Background
- Section 3 – Sampling Approach and Procedures
- Section 4 – Analytical Methodology and Data Validation
- Section 5 – Quality Assurance

Appendices are attached with the following information:

- Appendix A – Site-Specific Data Quality Objectives
- Appendix B – Standard Operating Procedures
- Appendix C – TDD No. 0001/19-XXX

## **2 SITE BACKGROUND**

Information regarding the site location, description, and site history are included in the following subsections.

### **2.1 SITE LOCATION, DESCRIPTION, AND HISTORY**

The facility is located at 1943 Independence Parkway in La Porte, Harris County, Texas. The facility is located within Deer Park, an industrial park about 15 miles southeast of Houston, and adjacent to and south of Buffalo Bayou. The facility can be reached by travelling east on Texas Highway 225 (Pasadena Freeway) from Texas Highway 8 (Sam Houston Tollway), and exiting north on to Independence Parkway. The facility geographic coordinates are Latitude 29.729425° North and Longitude 95.090321° West. Site coordinates were collected from the facility entrance. A Site Area Map is provided as Figure 2-1.

The ITC Deer Park terminal started operations in 1972 and currently has 13.1 million barrels (2.2 million cbm) of storage capacity in 242 aboveground storage tanks. The terminal stores a large variety of petrochemical liquids and gases, as well as fuel oil, bunker oil and distillates. The terminal has five ship docks and ten barge docks, rail and truck access, as well as multiple pipeline connections. A Site Layout Map is provided as Figure 2-2.

### **2.2 POTENTIAL SOURCES OF HAZARDOUS MATERIALS**

The components within the tanks that have caught fire include the gasoline components Naphtha, Xylene, and Toluene.

### **2.3 SITE CONCERNS**

The contaminants of concern (COCs) for the site are volatile organic compounds (VOCs) semi-volatile organic compounds (SVOCs), oil and grease (O&G), perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) compounds and the chemical oxygen demand (COD) of the affected water.

Once the fire is under control, concerns regarding public health and the environment are related to

the fire water run-off into the surface water pathway.



### **3 SAMPLING APPROACH AND PROCEDURES**

The purpose of this project is to collect surface water data to determine if COCs are entering Buffalo Bayou and the Houston Ship Channel. The data can also be used to estimate the potential human health risks associated with this site and adjacent off-site areas. In order to meet this objective, samples located along drainage areas to the Buffalo Bayou and Houston Ship Channel will be collected.

The specific field investigation activities that will be conducted around the site are described in the following subsections. Specifically, sampling procedures, quality assurance (QA), and the analytical approach that will be used during the ER are discussed. Relevant Standard Operating Procedures (SOPs) for field sampling methods are included as Appendix B to this QASP.

#### **3.1 OVERVIEW OF SAMPLING ACTIVITIES**

The EPA Team developed a sampling strategy intended to collect data necessary to evaluate and meet the objective of the response. The data quality objective and an overview of the health and safety and field activities required to complete these tasks are presented in the following subsections.

The EPA Team will collect daily surface water samples from 5 locations to be determined in the field.

##### **3.1.1 Data Quality Objective**

The objective of the sampling activities is to collect surface water data that most accurately determines the locations, concentrations, and potential transport pathway(s) of the COCs associated with the site. The Data Quality Objective (DQO) for these data were developed using the seven-step process, set out in *EPA Guidance on Systematic Planning Using the Data Quality Objectives Process: EPA QA/G-4*. To accomplish this, DQOs for determining the extent of site-related contamination in surface water have been established and are included as Appendix A.

##### **3.1.2 Health and Safety Plan Implementation**

START has developed a Health and Safety Plan (HASP) specific to the sampling activities that will take place at the ITC site. Health and safety considerations are essential to the success of the

sampling activities, and all personnel working on-site will strictly adhere to the HASP. The ER sampling activities will be conducted in accordance with the site-specific HASP. The FSO will be responsible for implementation of the HASP during field activities. The START field team will be required to conduct work according to the guidelines and requirements of the HASP. In accordance with the WESTON general health and safety operating procedures, the field team will also drive the route to the hospital specified in the HASP prior to initiating sampling activities.

### **3.1.3 Field Activities Review Meeting**

The START PTL will conduct a meeting with the entire field team to familiarize them with the project scope of work, to discuss the planned field activities and roles and responsibilities, and to review the project HASP and other relevant operating procedures. This meeting will be conducted prior to any site sampling activities.

### **3.1.4 Community Relations**

Community relations may require additional EPA involvement due to the general nature of the site. Community relations issues will be directed to the EPA OSC. If the EPA OSC is not present, the START PTL, under the guidance of the WESTON Scope of Work Leader, will manage community relations in the field as directed by the EPA OSC. If a community relations plan and an implementation program become necessary, START will establish each if requested by the EPA OSC.

## **3.2 SAMPLING PLAN DESIGN AND METHODS**

Surface water sampling will be conducted in general accordance with the EPA Compendium of Emergency Response Team (ERT) SOPs and WESTON SOPs (Appendix B). The specific sampling, decontamination, and sample handling procedures, including disposition of investigation-derived waste (IDW), is described in the following subsections. The EPA OSC will be notified, and concurrence will be obtained if significant deviations from the planned sampling activities are proposed. Details regarding deviations of the QASP will be documented in the START site logbook.

### **3.2.1 Surface Water Sampling**

The EPA team proposes to collect 5 daily surface water samples from locations that may be

affected by ITC product runoff and/or fire suppression water. Sample locations will be approved/determined by EPA. The water sampling will be conducted by submerging the sample container within the water in accordance with SOP 1002.01 and ERT SOP No. 2013 (Appendix B). Samples may be collected daily as directed by EPA.

### **3.2.2 Investigation-Derived Wastes**

Disposal of IDW such as personal protective equipment, will be the responsibility of the sampling team. The IDW will be managed according to EPA's *Management of Investigation-Derived Wastes during Site Inspections (EPA/540/G-9/009)* and other applicable state requirements and regulations. Disposable sampling equipment and personal protective equipment (PPE) will be double bagged and disposed properly as municipal waste. It is anticipated that minimal amounts of IDW will be generated during this activity.

### **3.2.3 Sample Handling Procedures**

Samples will be collected using equipment and procedures appropriate to the matrix, parameters, and sampling objectives. The volume of the sample collected must be sufficient to perform the analysis requested. Samples must be stored in the proper types of containers and preserved in a manner for the analysis to be performed (SOP 1001.01, 1001.10).

Clean, decontaminated sampling equipment and sample containers will be maintained in a clean, segregated area. Samples will be collected with clean decontaminated equipment (SOP 1201.01). Each sample collected for laboratory analysis will be placed directly into pre-cleaned, unused containers. Sampling personnel will change gloves between each sample collection/handling. Samples will be assembled and catalogued prior to shipping (SOPs 1101.01 and 1102.01) to the designated laboratory.

### **3.2.4 Quality Assurance/Quality Control Samples**

The EPA Team will collect field duplicate samples and submit matrix spike/matrix spike duplicates and equipment rinsate blank samples as needed during the sampling activities. Quality Assurance/Quality Control (QA/QC) samples will be collected according to the following protocol:

- Blind field duplicate samples will be collected during sampling activities at a frequency of one per 10 normal samples at locations selected by the EPA Team. The data obtained from

this sample will be used to assist in the quality assurance of the sampling procedures and laboratory analytical data by allowing an evaluation of reproducibility of results. Efforts will be made to collect duplicate samples in locations where there is visual evidence of contamination or where contamination is suspected.

- Equipment rinsate blanks will be prepared by pouring laboratory-grade deionized water over nondisposable sampling equipment after it has been decontaminated and collecting the rinse water in sample containers for analyses. These samples will be prepared to demonstrate that the equipment decontamination procedures for the sampling equipment were performed effectively. The equipment rinsate blanks will be prepared each day that non-disposable sampling equipment is used.
- Laboratory prepared trip blanks will be submitted with each shipment containing samples for volatile organic compound (VOC) analysis. The laboratory prepared trip blanks will consist of three 40-milliliter glass sample containers with Teflon-lined septum caps. The trip blanks will be prepared with deionized water prior to leaving the laboratory. Trip blanks are used to evaluate the potential cross-contamination that may occur during the shipment of samples.
- Temperature blanks will be prepared in the field and will consist of one 40-milliliter glass sample container with Teflon-lined septum cap. The temperature blank will be packaged along with the field samples in the shipping cooler and will represent the temperature of the incoming cooler upon receipt at the laboratory. Use of these samples within a shipping container enables the laboratory to assess the temperature of the shipment without disturbing any of the field samples.
- One matrix spike/matrix spike duplicate sample per matrix will be collected during sampling activities at a location selected by the EPA Team. The data obtained from this sample will be used to assist in the quality assurance of the laboratory analytical procedure. Matrix spiking ensures that the laboratory is able to extract an acceptable percentage of a spiked constituent. The matrix spiking analysis often duplicates the spiking procedure on a separate sample volume. Therefore, a complete matrix analysis requires triple sample volume.

### **3.3 SAMPLE MANAGEMENT**

Specific nomenclature that will be used by START will provide a consistent means of facilitating the sampling and overall data management for the project (WESTON SOP 0110.05). The START PTL must approve any deviations from the sample nomenclature proposed below.

As stated in WESTON SOP 0110.05, sample nomenclature will follow a general format regardless of the type or location of the sample collected. The general nomenclature consists of the following components:

- Geographic location (e.g., location).
- Collection type (composite, grab, etc.).
- QA/QC type (normal, duplicate, etc.).
- Sequence and/or Depth - An additional parameter used to further differentiate samples.

Sample data management will be completed utilizing SCRIBE including Chain-of-Custody (COC) and sample documentation needs.

### **3.4 DECONTAMINATION**

Decontamination of sampling equipment will be conducted as prescribed in SOP 2006: *Sampling Equipment Decontamination* in Appendix B to assure the quality of samples collected. Disposable equipment intended for one time use will not be decontaminated but will be packaged for appropriate disposal. Decontamination will occur prior to and after each use of a piece of non-dedicated sampling equipment.

### **3.5 SAMPLE PRESERVATION, CONTAINERS, AND HOLD TIMES**

Once collected, samples will be stored in coolers and kept at approximately 4° C while at the site and until they are submitted for analysis. Samples that have been analyzed will be disposed of by the designated laboratory in accordance with the laboratory SOPs.

COC forms will be completed for each sample shipment and sent with the samples to Test America laboratories located in Houston, Texas. Samples will be driven daily to the lab.

Sample preservation containers and holding times utilized during the ER will be consistent with the analytical methods as provided in Table 3-1. The EPA OSC will receive analytical results based on a Rush 1-Day turnaround time (TAT) for VOCs, Oil and Grease (O&G), and Chemical Oxygen Demand (COD). SVOCs will be provided on a Rush 2-Day TAT. The TAT is initiated when the samples are received by the laboratory and continues until the analytical results are made available to the EPA Task Manager either verbally or by providing facsimile or email copies of the results for review.

**Table 3-1**  
**Requirements for Containers, Preservation Techniques,**  
**Sample Volumes, and Holding Times ITC**  
**La Porte, Harris County, Texas**

<b>Name</b>	<b>Analytical Methods</b>	<b>Container</b>	<b>Preservation</b>	<b>Maximum Holding Time</b>
VOCs	SW846 8260B	3x 40-ml VOA bottles - water	<6° C HCL	14 days
SVOCs	SW846 8270D	2 1-liter ambers - water	<6° C	7 days until extraction
O & G	1664	1-liter polyethylene bottle - water	<6° C H <sub>2</sub> SO <sub>4</sub>	28 days
COD	SM5220-D/410.4	1-liter polyethylene bottle - water	<6° C H <sub>2</sub> SO <sub>4</sub>	28 days
PFOS/PFOA	537.1	1-liter polyethylene bottle - water	<6° C	14 days

## 4 ANALYTICAL METHODOLOGY AND DATA VALIDATION

Samples collected by START will be analyzed by either the EPA lab, a Contract Laboratory Program (CLP) lab or a NELAP-certified subcontracted commercial laboratory, utilizing EPA publication SW-846, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods or applicable EPA approved methods*. The following methods of analysis will be conducted on all samples submitted.

- Total Compound List (TCL) VOCs via EPA SW846 Methods 5030/8260B
- TCL SVOCs via EPA SW846 Method 8270D
- Oil and Grease (O&G) via EPA Method 1664
- Chemical Oxygen Demand (COD) via Standard Method SM 5220-D/EPA 410.4)
- Perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) via EPA Method 537.1

Data deliverables from a NELAP certified subcontracted commercial laboratory will consist of a Preliminary/Level II data deliverable package to be received on the Rush TAT due date. A final data deliverable package including a full CLP like data package (Level IV data package with QC and raw data) in PDF format and a final Electronic Data Deliverable (EDD) in excel format will be received at the associated Standard TAT due date.

Data validation from samples sent to the NELAP-certified subcontracted commercial laboratory will be conducted by START. START will provide an evaluation of QA/QC samples for reporting purposes. Data validation will be conducted in accordance with the EPA *Contract Laboratory Program National Functional Guidelines for Organic Superfund Data Review* (January 2017), and the EPA *Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review* (January 2017). A summary of the data validation findings will be presented in Data Validation Summary Reports as part of the final report. The following will be evaluated to verify that the analytical data is within acceptable QA/QC tolerances:

- The completeness of the laboratory reports, verifying that required components of the report are present and that the samples indicated on the accompanying COC are addressed in the report.
- The calibration and tuning records for the laboratory instruments used for the sample analyses.
- The results of internal standards analyses.

- The results of laboratory blank analyses.
- The results of laboratory control sample (LCS) analyses.
- The results of matrix spike/matrix spike duplicate (MS/MSD) analyses.
- The results of surrogate recovery analyses.
- Compound identification and quantification accuracy.
- Laboratory precision, by reviewing the results for blind field duplicates.
- Variances from the QA/QC objectives will be addressed as part of the Data Validation Summary Reports.



## **5 QUALITY ASSURANCE**

Quality assurance will be conducted in accordance with the WESTON Corporate Quality Management Manual, the WESTON Programmatic Quality Assurance Project Plan (QAPP), and the WESTON Quality Management Plan. Following receipt of the TDD from EPA, a Quality Control (QC) officer will be assigned and will monitor work conducted throughout the project including reviewing interim report deliverables and field audits. The START Team PTL will be responsible for QA/QC for the field investigation activities. The designated laboratory utilized during the investigation will be responsible for QA/QC related to the analytical work. The START Team will also collect samples to verify that laboratory QA/QC is consistent with the required standards and to validate the laboratory data received.

### **5.1 SAMPLE CUSTODY PROCEDURES**

Because of the evidentiary nature of sample collection, the possession of samples must be traceable from the time the samples are collected until they are introduced as evidence in legal proceedings. After sample collection and identification, samples will be maintained under COC procedures. If the sample collected is to be split (laboratory QC), the sample will be allocated into similar sample containers. Sample labels completed with the same information as that on the original sample container will be attached to each of the split samples. All personnel required to package and ship coolers containing potentially hazardous material will be trained accordingly.

START personnel will prepare and complete COC forms using the Scribe Environmental Sampling Data Management System (SCRIBE) for all samples sent to an off-site laboratory. The COC procedures are documented and will be made available to all personnel involved with the sampling. A typical COC record will be completed each time a sample or group of samples is prepared for shipment to the laboratory. The record will repeat the information on each sample label and will serve as documentation of handling during shipment. A copy of this record will remain with the shipped samples at all times, and another copy will be retained by the member of the sampling team who originally relinquished the samples.

Samples relinquished to the participating laboratories will be subject to the following procedures for transfer of custody and shipment:

- Samples will be accompanied by the COC record. When transferring possession of samples, the individuals relinquishing and receiving the samples will sign, date, and note the time of the sample transfer on the record. This custody records document transfer of sample custody from the sampler to another person or to the laboratory.
- Samples will be properly packed for shipment and dispatched to the appropriate laboratory for analysis with separate, signed custody records enclosed in each sample box or cooler. Sample shipping containers will be custody-sealed for shipment to the laboratory. The preferred procedure includes use of a custody seal wrapped across filament tape that is wrapped around the package at least twice. The custody seal will then be folded over and stuck to seal to ensure that the only access to the package is by cutting the filament tape or breaking the seal to unwrap the tape.
- If sent by common carrier, a bill of lading or airbill will be used. Bill of lading and airbill receipts will be retained in the project file as part of the permanent documentation of sample shipping and transfer.

WESTON SOPs 1101.01 and 1102.01 describe these procedures in more detail.

## **5.2 PROJECT DOCUMENTATION**

All documents will be completed legibly in ink and by entry into field logbooks and SCRIBE. Response Manager will be used at the direction of the EPA OSC.

## **5.3 FIELD DOCUMENTATION**

The following field documentation will be maintained as described below.

### **5.3.1 Field Logbook**

The field logbook is a descriptive notebook detailing site activities and observations so that an accurate, factual account of field procedures may be reconstructed (SOP 1501.01). All entries will be signed by the individuals making them. Entries should include, at a minimum, the following:

- Site name and project number.
- Names of personnel on site.
- Dates and times of all entries.
- Description of all site activities, including site entry and exit times.
- Noteworthy events and discussions.

- Daily weather conditions.
- Site observations.
- Identification and description of samples, including locations, sample ID, sample date and time, sample depth, sample preservation, collection type, analyses requested, and chain-of-custody information.
- Subcontractor information and names of on-site personnel.
- Records of photographs in an excel spreadsheet.
- Site sketches.
- Calibration results, as necessary.

### **5.3.2 Sample Labels**

Sample labels will be securely affixed to the sample container. The labels will clearly identify the particular sample and include the following information:

- Sample ID
- Site name and project number.
- Date and time the sample was collected.
- Sample preservation method.
- Analysis requested.
- Sampling location.

### **5.3.3 Chain-of-Custody Record**

A chain-of-custody will be maintained from the time of sample collection until final deposition. Every transfer of custody will be noted and signed for and a copy of the record will be kept by each individual who has signed it.

### **5.3.4 Custody Seal**

Custody seals demonstrate that a sample container has not been tampered with or opened. The individual who has custody of the samples will sign and date the seal and affix it to the container in such a manner that it cannot be opened without breaking the seal.

### **5.3.5 Photographic Documentation**

The START Team will take photographs to document site conditions and activities as site work progresses. Initial conditions will be well documented by photographing features that define the site-related contamination or special working conditions. Representative photographs will be

taken of each type of site activity. The photographs will show typical operations and operating conditions as well as special situations and conditions that may arise during site activities. Site final conditions will also be documented as a record of how the site appears at completion of the work.

Photographs will be taken with a digital camera capable of recording the date on the image. Each photograph will be recorded in an excel spreadsheet with the location of the photographer, direction the photograph was taken, and the subject of the photograph and its significance (i.e., why the picture was taken). Where appropriate, the photograph location, direction, and subject will also be shown on a site sketch.

#### **5.4 REPORT PREPARATION**

At the completion of the project, the START Team will review and evaluate the laboratory data and prepare a draft report of field activities, figures, and analytical results for EPA OSC review. Draft deliverable documents will be uploaded to the EPA TeamLink website for EPA OSC review and comment. The START Team will address the comments and prepare the final report. The final report will be uploaded to the EPA TeamLink website, and a final compact disk (CD) deliverable will be sent to the EPA and EPA OSC.